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EXAMINER

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ART UNIT

PAPER NUMBER

1792

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The PTOL 1449s of 07/06/2006 and 11/13/2006 have been received, reviewed and considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-6, 10-13 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/13618, WO 00/72695 A and EP 0 765 604 A.

WO 02/13628 A teaches a partial crystallization device comprising a pump (See Fig 1(a), “HHP”) for circulating the solution in a circuit of a heat exchanger formed from a tube in contact with a cooling circuit (“STMX”); “STMX” 115; STMX); the three static mixers also constitute a heat exchanger: (See page 13, lines 1—16). The circuit of the exchanger comprises a tube (15) through which the liquid flows and does not include any obstacles. Consequently, the device according to WO 02 '618' appears to comprise static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer that appears capable of suppressing supercooling. The feature “surface condition capable of delaying the

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appearance of crystals” also seems to be disclosed in document WO 02 ‘618 (the material flowing through the tube 15, whose internal surface has a more or less “slight” roughness.

(See page 12, lines 23-30; Fig. 1(a)).

WO 00/72695 A teaches a partial crystallization device comprising a pump (See Fig. 3
WO 02/13618 (D1) describes a partial

“6”) for crystallization device comprising a pump (figure 1a, “HEP”) for circulating the solution in a tube through which it contact with a cooling circuit (“STMK”; “STMX” 15; e according to WO STMX); the three static mixers also constitute a e of crystals. The ma circuit of the exchanger comprises a tube (15) ole of suppress through which the liquid flows and does not).
1 include any obstacles. Consequently, the device at consists of according to D1 appears to comprise static means : 8, line 15
circulat capable of delaying the appearance of crystals
and foll (see the objection with regard to clarity in Box mperature below f VIII below). The material to be partially recooler” crystallized is then sent to a static mixer that g so as to may be appears capable of suppressing supercooling (see cause tl the objection with regard to clarity in Box VIII below). Consequently, the subject matter of claim 1 is not novel with respect to D1 (PCT Article 4. 33(2)). D1 also discloses the features of claims II 2, 6 and 10-12.
obviousness rejections set forth in the Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/13618 and EP 0 765 604 A .

WO 02/13628 A teaches a partial crystallization device comprising a pump (See Fig 1(a), “HHP”) for circulating the solution in a circuit of a heat exchanger formed from a tube in contact with a cooling circuit (“STMX”); “STMX” 115; STMX); the three static mixers also constitute a heat exchanger: (See page 13, lines 1—16). The circuit of the exchanger comprises a tube (15) through which the liquid flows and does not include any obstacles. Consequently, the device according to WO 02 '618' appears to comprise static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer that appears capable of suppressing supercooling. The feature “surface condition capable of delaying the appearance of crystals” also seems to be disclosed in document WO 02 '618 (the material flowing through the tube 15, whose internal surface has a more or less “slight” roughness. (See page 12, lines 23-30; Fig. 1(a)).

EP 0 765 605 teaches a partial crystallization method comprising a step that consists of circulating a solution in a circuit of a heat exchanger formed from a tube in contact with a cooling circuit (“STMX”); “STMX” 115; STMX); the three static mixers also constitute a heat exchanger: see page 13, lines 10-16). The circuit of the exchanger comprises a tube (15) through which the liquid flows and does not include any obstacles. Consequently, the device according to WO 02 '618' appears to comprise static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer that appears capable of suppressing supercooling. The feature “surface condition capable of delaying the appearance of crystals” also seems to be disclosed in document WO 02 '618 (the material flowing through the tube 15, whose internal surface has a more or less “slight” roughness. (See page 12, lines 23-30; Fig. 1(a)).

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below freezing temperature (“undercooled”) using static maintenance means (the “precooler” may be considered to be a “static: means); including suppression of the supercooling so as to cause the appearance of the crystallization (ultrasonic treatment”).

The difference being that neither WO '618 nor EP '605 A teaches a step of varying the flow of solution using a valve or introducing bubbles of gas into the solution circulation circuit. However, it would have been obvious to one of ordinary skill in the art to modify and optimize the apparatus and process parameter limitations through routine experimentation in order to ensure proper orientation. The motivation being to be able to control the attachment of crystals forming onto the walls of the crystallization device.

Any minor differences in the limitations of the dependent claims have been considered. This statement is meant to include limitations such as varying the flow of solution using a valve of introducing bubbles of gas into the solution.

Furthermore, any such differences are deemed to be result-effective variables that one of ordinary skill in the art would be expected to manipulate to advantage. Additionally, such limitations can be considered to have been simply known as conventional to the artisan practicing in the art at the time the invention was made and/or were common practices which were so well known in the art that they would have been taken for granted. If applicant believes that one or more limitations are critical to the invention, then applicant should amend the claims to reflect such critical limitations as well as indicate where in the specification such critical limitations were discussed and demonstrated.

The limitations of all claims have been considered and are deemed to be within the purview of the prior art.

Allowable Subject Matter

7. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

8. Claims 4, 7-9 and 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The most relevant prior art of record is that of WO 02/13618, WO 00/72695 A and EP 0 765 604 A, which was cited by the applicant. However, it does not teach nor fairly suggest singularly or in any combination thereof crystallization, as stated in the instant invention, wherein the surface state has a low roughness at the supercooling rupture means takes the form of greater roughness, the change of direction in an elbow in the circulation circuit, and/or a chicane, and/or at least one change of section inside the circulation circuit or in which the obstacles to the circulation of the solution includes needles and/or plates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felisa Hiteshew whose telephone number is (571) 272-1463. The examiner can normally be reached on Mondays through Thursday from 5:30 AM to 4:00 PM with Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov, can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is

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assigned is (571) 273-1463.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866- 217-9197 (toll-free).

/Felisa C. Hiteshew/
Primary Examiner, Art Unit 1792